# CdS photoconductive cell **Resin coating type (5R type)**

Standard type designed for general-purpose, wide application



CdS photoconductive cells utilize photoconductive effects in semiconductors that decrease their resistance when illuminated by light. These sensors are non-polar resistive elements with spectral response characteristics close to the human eye (luminous efficiency), thus making their operating circuits simple and small.

### **Features**

- Small size, thin package
- Low price
- Wide range of sensor lineup

## **Applications**

- Programed electronic shutter and stroboscope light control for compact camera
- Auto dimmer for digital display, CRT and room illumination
- Sensor for automatic light on/off
- Sensor for electronic toy and teaching aid material

■ Absolute maximum ratings / Characteristics (Typ. Ta=25 °C, unless otherwise noted)

Absolute maximum ratings / Characteristics (Typ. 1a-25 °C, unless otherwise noted)										
	Absolute maximum ratings			Characteristics *1						
Type No.	Supply voltage	Power dissipation P	Ambient temperature Ta	Peak sensitivity wavelength λp	Cell resistance *2				Response time 10 lx *5	
					10 <i>lx</i> , 2856 K		0 lx *3	γ 100 *4 10	Rise time tr	Fall time tf
					Min.	Max.	Min.			ĺ
	(Vdc)	(mW)	(°C)	(nm)	$(k\Omega)$	$(k\Omega)$	$(M\Omega)$	100 to 10 <i>lx</i>	(ms)	(ms)
P687-02		30	-30 to +50	620	5	20	5.0	0.70	60	25
P1201-04	100	50	-30 to +60	E40	50	200	20	0.90	40	30
P1201-06		50	-30 10 +60	540	50	100	20	0.90	40	30
P1241-04					3	9	0.2	0.70		
P1241-05	50	30	-30 to +60	560	8	24	0.5	0.70	50	40
P1241-06					5	20	0.5	0.75		
P1444	100		-30 to +50	620	10	50	5.0	0.85	40	10
P1445					48	140	20			

- \*1: All characteristics are measured after exposure to light (100 to 500 lx) for one to two hours.
- \*2: The light source is a standard tungsten lamp operated at a color temperature of 2856 K.
- \*3: Measured 10 seconds after shutting off the 10 lx light.
- \*4: Typical gamma characteristics (within  $\pm 0.10$  variations) between 100 lx to 10 lx

$$\gamma_{100}^{100} = \left| \frac{\log (R_{100}) - \log (R_{10})}{\log (E_{100}) - \log (E_{10})} \right|$$

E100, E10: illuminance 100 lx, 10 lx

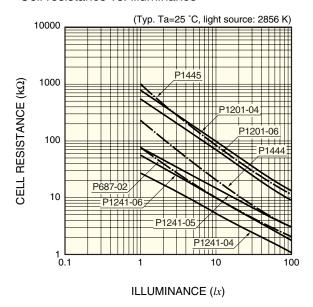
R100, R10: resistance at 100 lx and 10 lx respectively

\*5: The rise time is the time required for the sensor resistance to reach 63 % of the saturated conductance level (when fully illuminated). The fall time is the time required for the sensor resistance to decay from the saturated conductance level to 37 %.

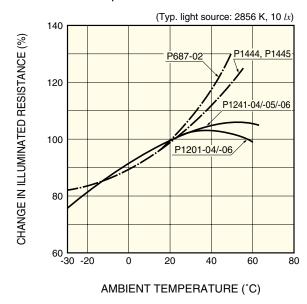


## CdS photoconductive cell Resin coating type (5R type)

### ■ Cell resistance vs. illuminance

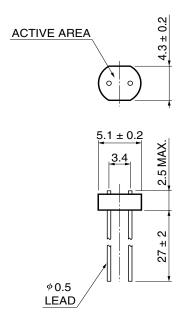


## ■ Resistance temperature characteristics



KCDSB0023EA KCDSB0024EA

## ■ Dimensional outline (unit: mm)



KCDSA0001EA

**HAMAMATSU** 

Information furnished by HAMAMATSU is believed to be reliable. However, no responsibility is assumed for possible inaccuracies or omissions. Specifications are subject to change without notice. No patent rights are granted to any of the circuits described herein. ©2001 Hamamatsu Photonics K.K.

HAMAMATSU PHOTONICS K.K., Solid State Division

1126-1 Ichino-cho, Hamamatsu City, 435-8558 Japan, Telephone: (81) 053-434-3311, Fax: (81) 053-434-5184, http://www.hamamatsu.com
U.S.A.: Hamamatsu Corporation: 360 Foothill Road, P.O.Box 6910, Bridgewater, N.J. 08807-0910, U.S.A., Telephone: (1) 908-231-0960, Fax: (1) 908-231-1218
Germany: Hamamatsu Photonics Deutschland GmbH: Arzbergerstr. 10, D-82211 Herrsching am Ammersee, Germany, Telephone: (49) 08152-2750, Fax: (49) 08152-2658
France: Hamamatsu Photonics France S.A.R.L.: 8, Rue du Saule Trapu, Parc du Moulin de Massy, 91882 Massy Cedex, France, Telephone: 33-(1) 69 53 71 00, Fax: 33-(1) 69 53 71 10
United Kingdom: Hamamatsu Photonics UK Limited: 2 Howard Court, 10 Tewin Road, Welwyn Garden City, Hertfordshire AL7 1BW, United Kingdom, Telephone: (44) 1707-294888, Fax: (44) 1707-325777
North Europe: Hamamatsu Photonics Norden AB: Smidesvägen 12, SE-171 41 Solna, Sweden, Telephone: (46) 8-509-031-01
Italy: Hamamatsu Photonics Italia S.R.L.: Strada della Moia, 1/E, 20020 Arese, (Milano), Italy, Telephone: (39) 02-935-81-733, Fax: (39) 02-935-81-741